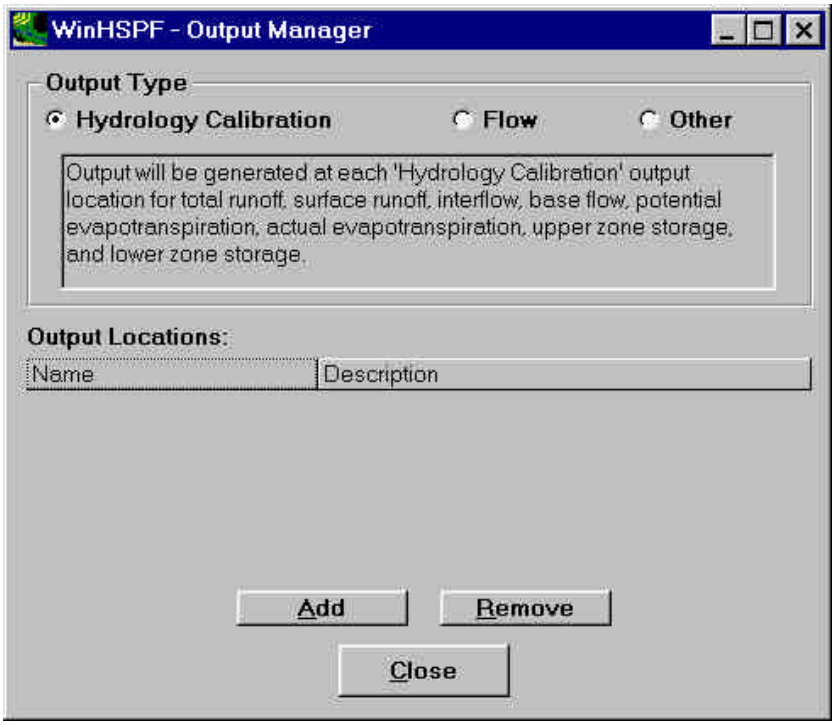
Lesson 4: Specifying Output Timeseries

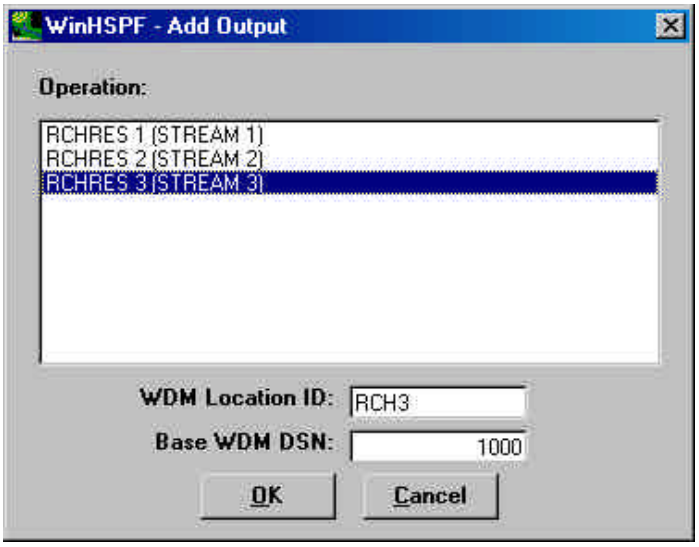
WinHSPF output timeseries are stored in data sets in the Project WDM File. Output data sets associated with one UCI file are tagged with a common attribute, so that WinHSPF can identify which data sets are associated with a particular UCI file. This WDM attribute is known as the scenario name; it is also used in GenScn to identify timeseries of a common scenario.

WinHSPF has two ways to specify output timeseries. The first way is through the Output Manager. The **Output Manager** is accessed either by choosing the **Functions:Output** menu option or by clicking the  icon on the toolbar. The Output Manager window will appear containing a set of radio buttons and a list of output locations. The radio buttons are used to specify which of the three types of output to view. Clicking on one of the radio buttons produces a list of locations where that output has been specified.

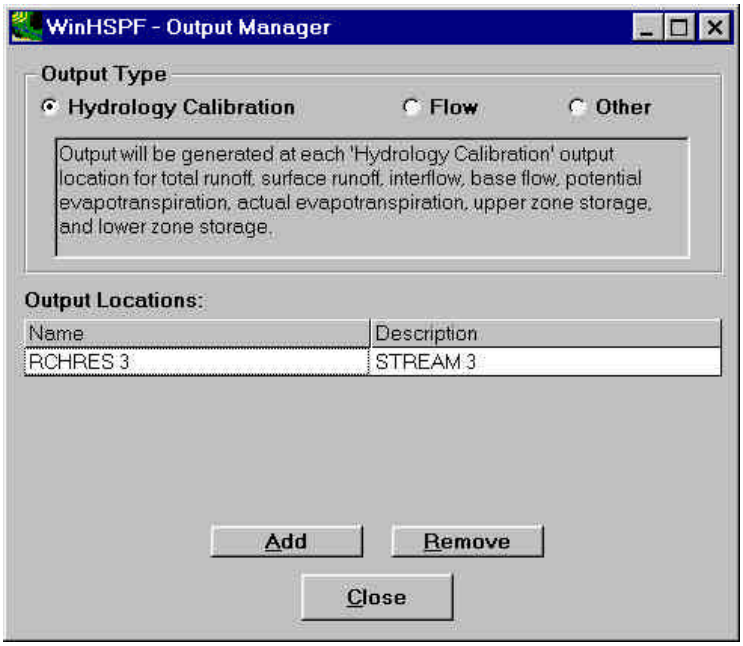


The first output type is Hydrology Calibration. This button will already be selected when entering the Output Manager. Underneath the radio buttons is a text box explaining which output timeseries will be generated during the HSPF model run. There are eight output timeseries required by the Expert System for HSPF Hydrology Calibration, known as HSPEXP. The list below the text box will be empty when running this tutorial, because by default no hydrology calibration locations are specified. Adding calibration locations to this list is accomplished by clicking on the **Add** button. Click this button. A window will be produced containing a list of available calibration locations, i.e. the reaches of the watershed, along with two text fields. Choose 'Rchres 3' from the list. The WDM Location ID will be used in GenScn for the user to specify locations for analysis. Enter 'RCH3' or up to eight characters of

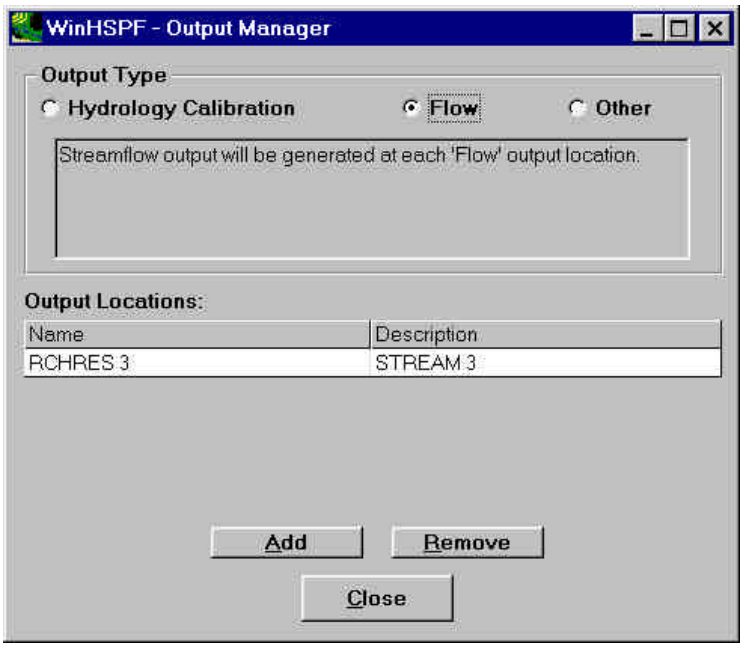
text to use as the location identifier. Use 1000 as the base data set number. The new data sets will be numbered as the available data sets following that number.



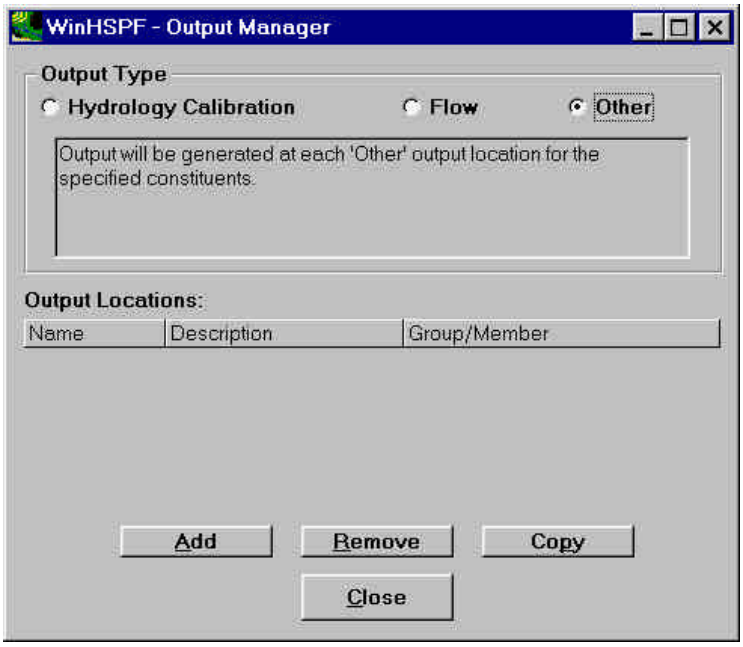
Click **OK** from this window, and you will be back in the **Output Manager** window. As you return to the **Output Manager** window, eight new time-series data sets are created in the project WDM file, as required by the Expert System for HSPF Hydrology Calibration, known as HSPEXP. The UCI in memory is modified to include the appropriate Copy operation as well as the appropriate External Targets, Schematic, and Mass-Link Blocks. The Output Manager window now shows an output hydrology calibration location at RCHRES 3.



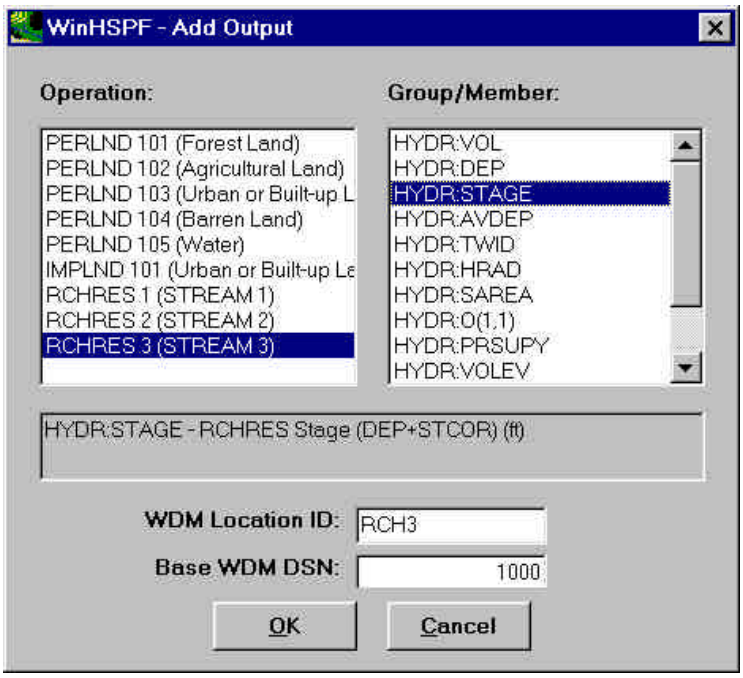
Click the **Flow** radio button and notice that be default Flow is specified for output at the outlet of the watershed, RCHRES 3. Flow output can be added by means similar to those used to add a calibration location.



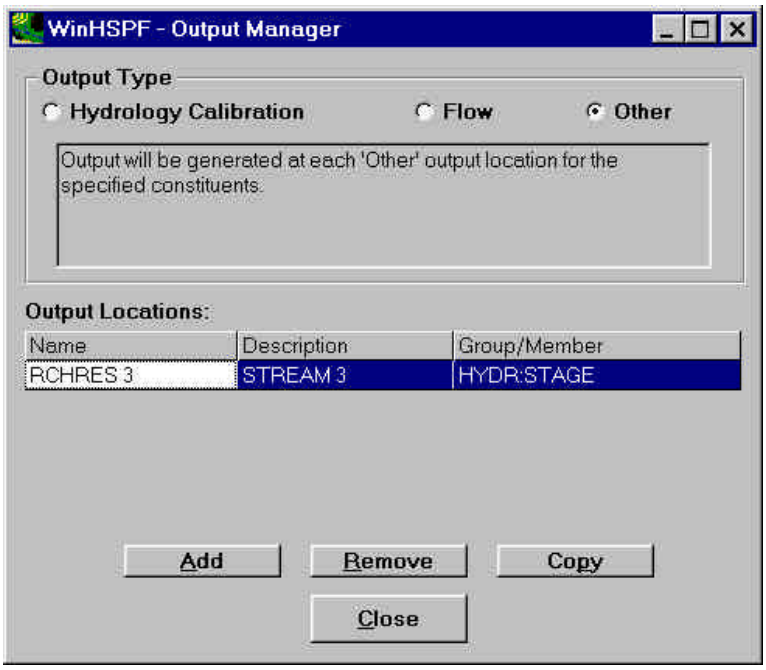
The **Other** radio button is used to add other outputs.



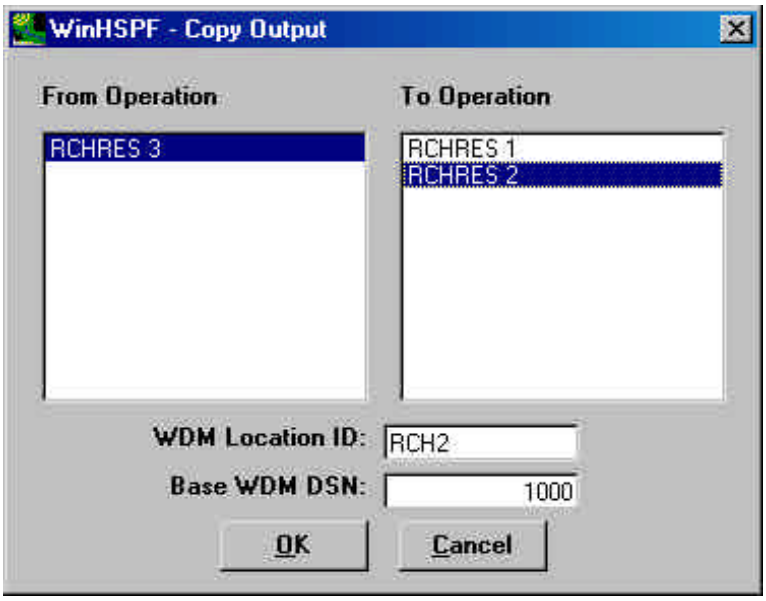
Click **Add** to add additional outputs from this simulation. A window will be produced containing a list of model segments.



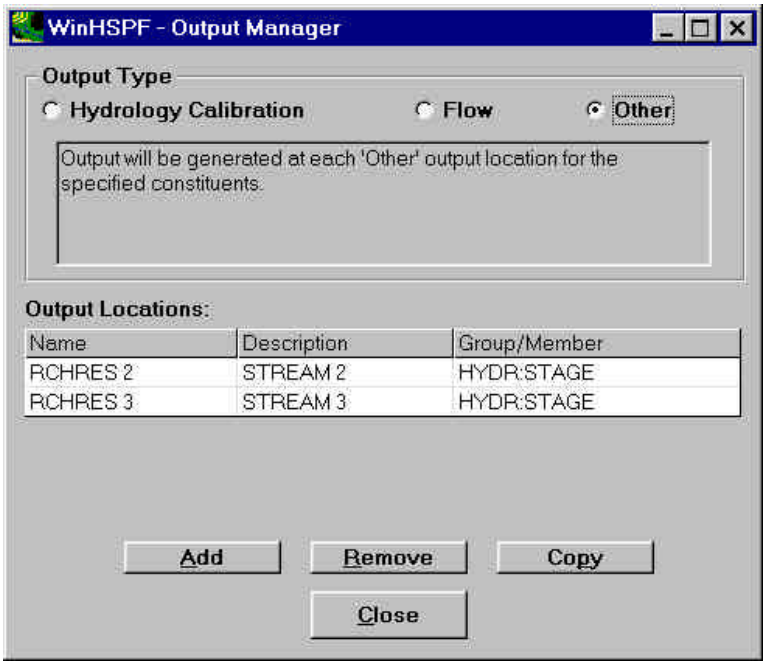
Choose 'RCHRES 3', and a list of Group and Members will appear. This list contains all valid Group and Member pairs that can be output from this operation given the current active sections of this operation. Choose 'Hydr:Stage' to output 'Stage' for this reach. The gray text box in the middle of the form displays the Operation and Group/Member selections. Click **OK** to add this output specification.



Notice that 'Stage' is now listed in the Output Manager. **Copy** is used to copy output specifications from one model segment to another. Click **Copy**, and a window will appear containing a list of operations with output specified.

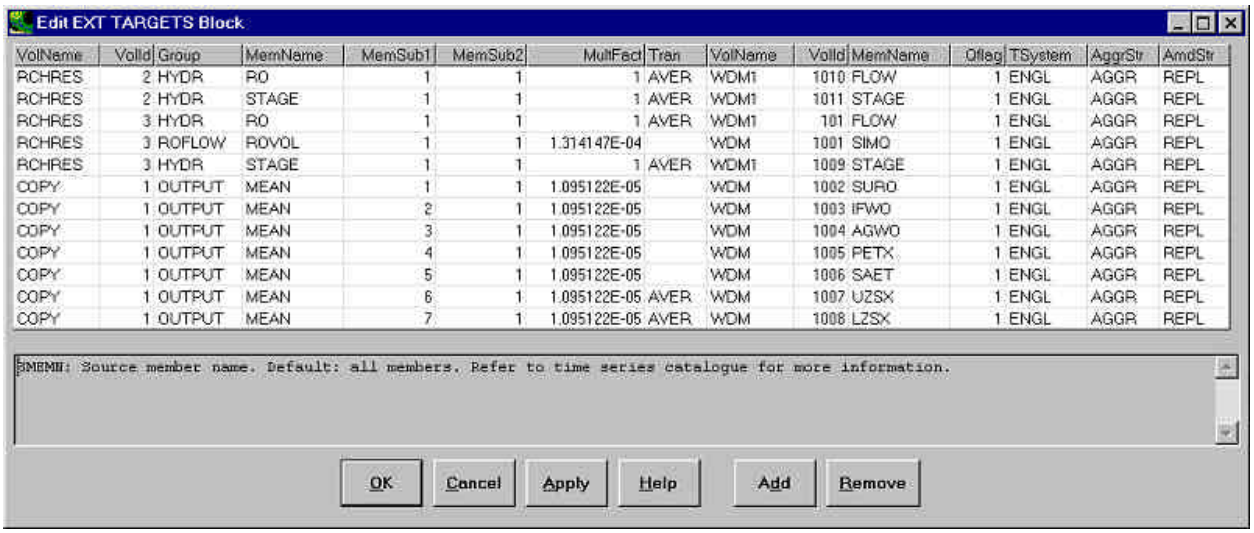


Choose 'RCHRES 3' as the 'From' operation, and then choose 'RCHRES 2' as the 'To' operation. Then click **OK**. Notice now in the Output Manager that 'Stage' is also specified for output from RCHRES 2.

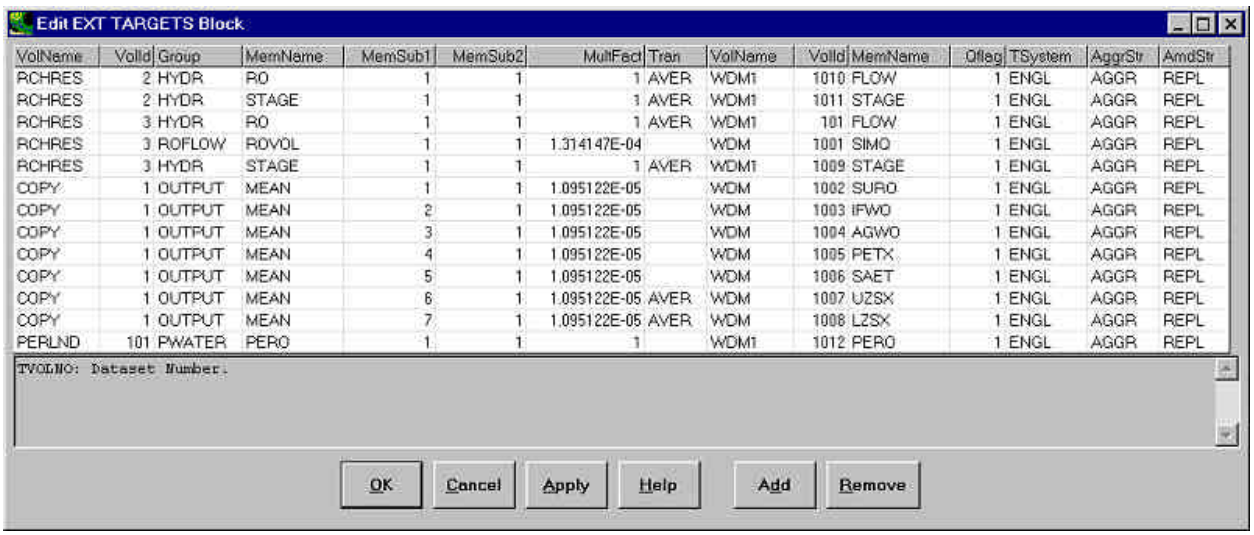


Click **Close** to return to the main WinHSPF window.

Another way to specify output timeseries is through editing the External Targets block. This functionality is accessed either by choosing the **Edit:EXT TARGETS** menu option or by choosing EXT TARGETS in the Input Data Editor. Click on the **Edit** menu, then select the **EXT TARGETS** option.



The **Edit External Targets** window contains a grid showing all External Targets entries. Each row contains the specifications for one output time series; each column of the grid represents a distinct specification. The gray text box in the middle of the form provides a description of the currently selected specification. To add a new entry, click on the **Add** button. A new record will appear in the list. Double click in the left-most column of the bottom row, and choose 'Perlnd'. Double click in the next column, and choose '101'. Proceed through the rest of the fields, adding values as shown in the image below. For this example, be sure to use a data set number that does not already exist in your WDM file.

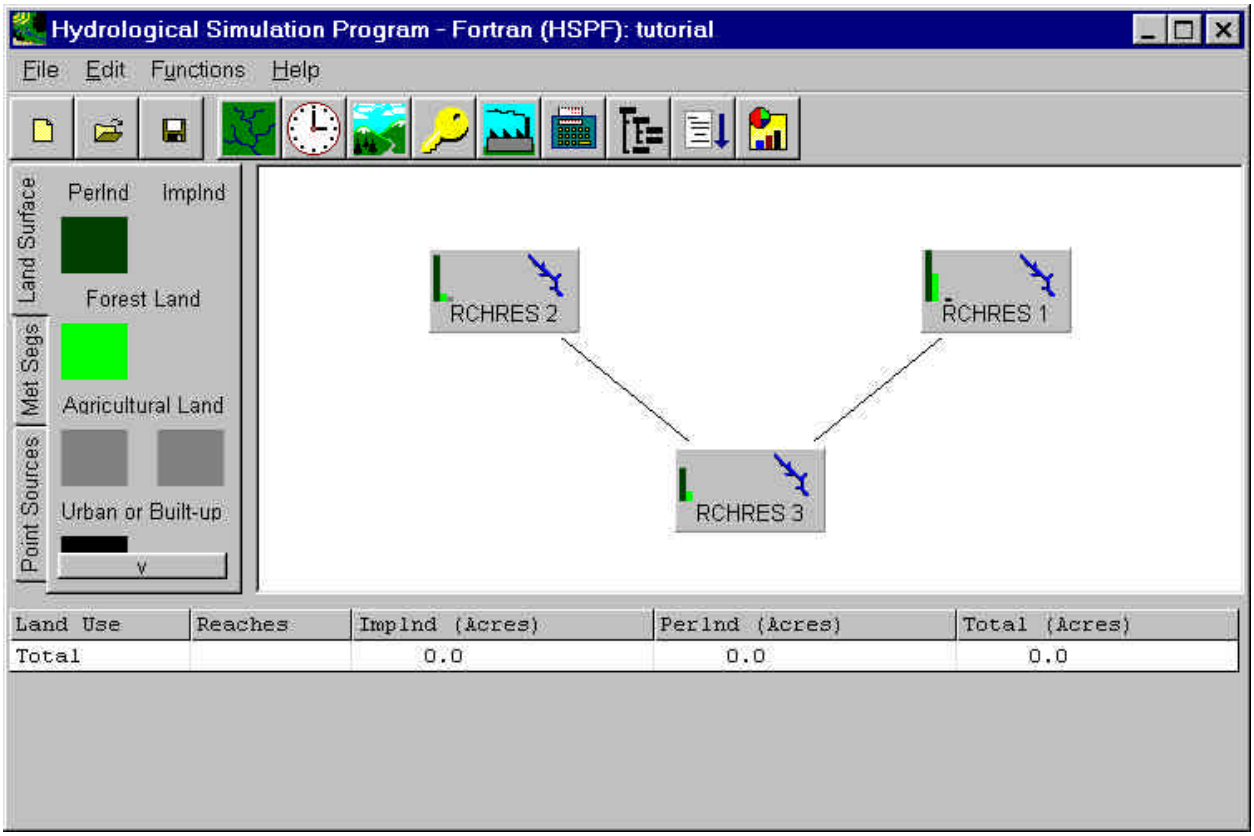


Once you have added values for each field, click the **Apply** button. The **Add Data Set** window will appear, which indicates that the data set number you have selected does not yet exist. The user may edit attribute values for this new data set if desired. Click the **OK** button to accept the values for this new data set.

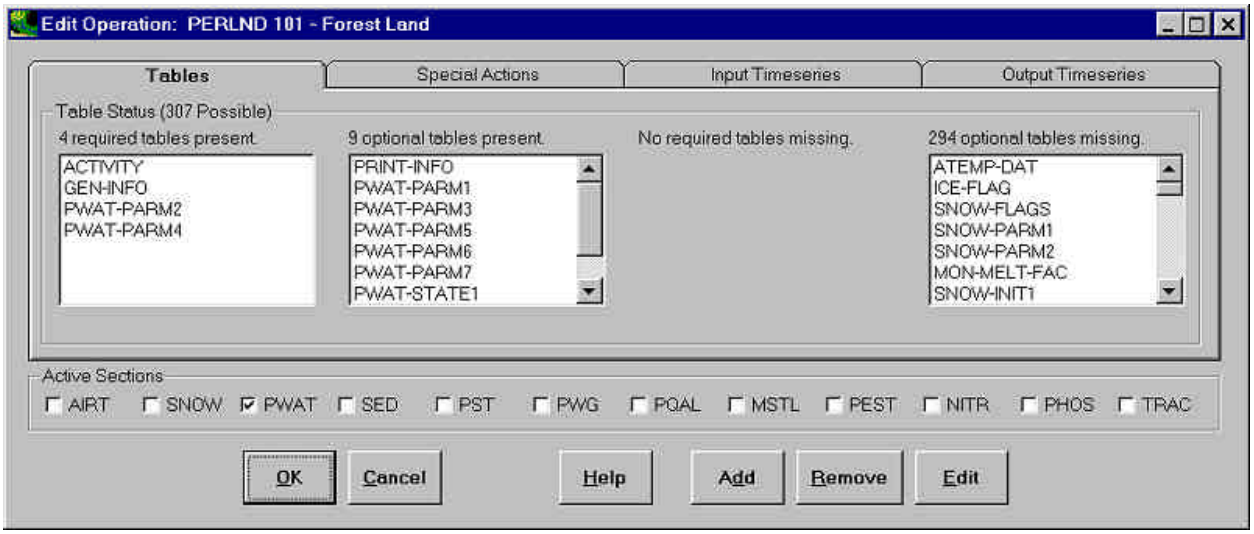
At this point you have added a new output timeseries. Click **OK** in the **Edit External Targets** window to return to the main WinHSPF window.

Lesson 5: Changing HSPF Parameters and Saving the Revised Project

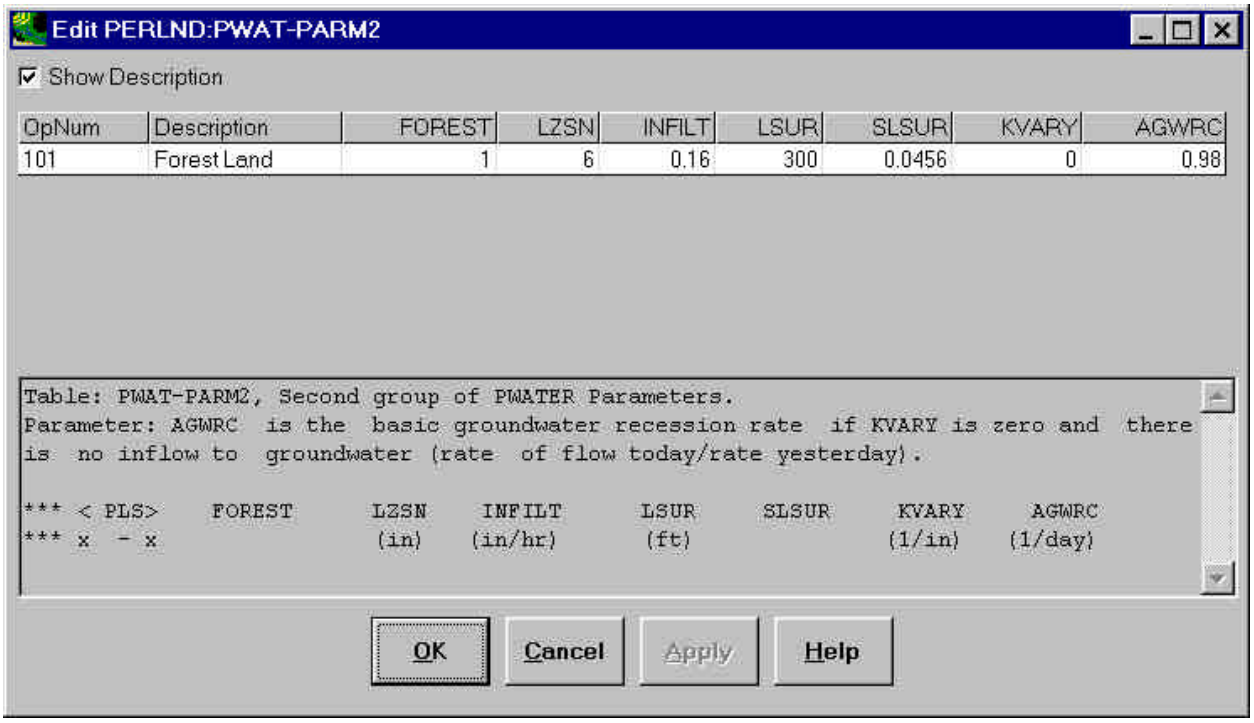
With a project active in WinHSPF, the user may wish to modify some HSPF parameters and save the changes. This situation occurs often during model calibration. This lesson demonstrates how to change HSPF parameters and save the changes.



WinHSPF permits the user to change HSPF parameters in a variety of locations throughout the software. Double click on the **Forest Land** box in the **Land Surface** tab of the main WinHSPF window. If you selected the 'Grouped' model segmentation in Lesson 1, the **Edit Operation** window will appear for PERLND 101.

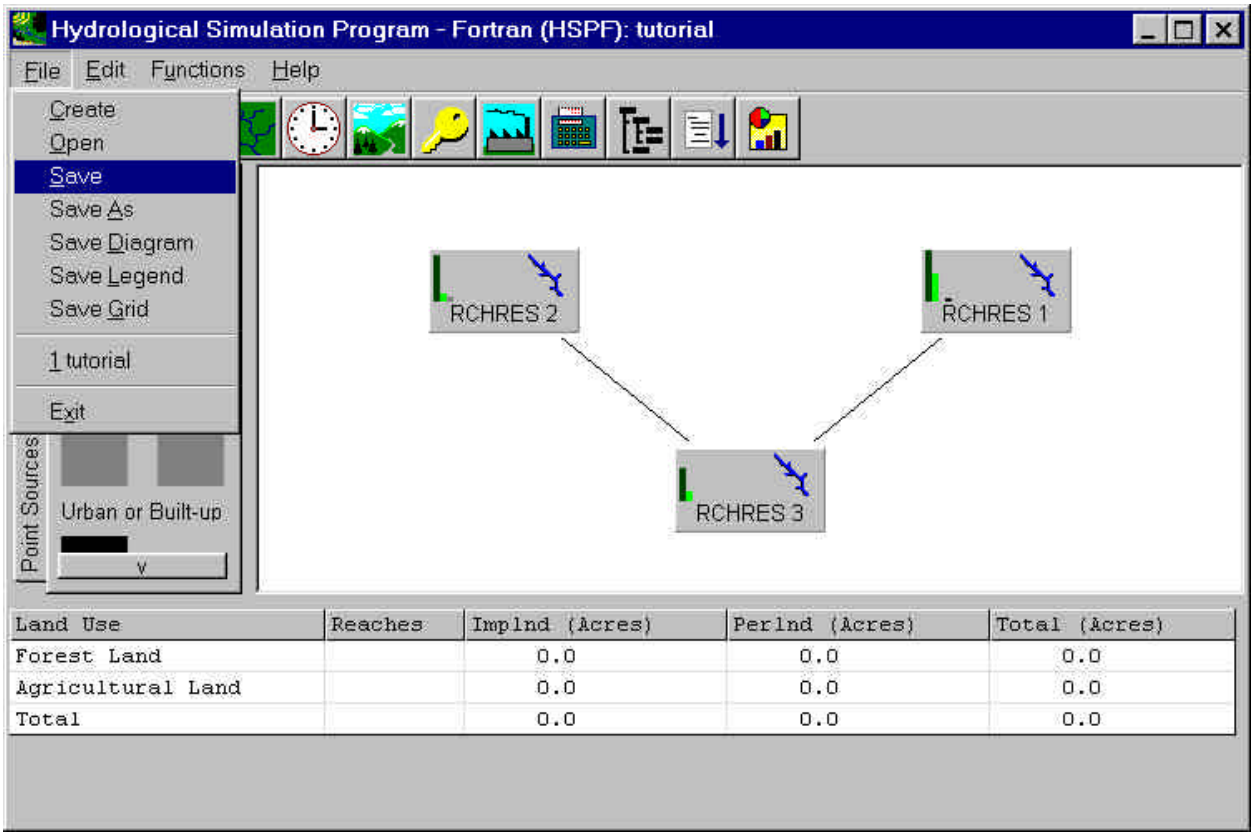


In the **Edit Operation** window, double click on **Pwat-Parm2**. A new window will appear for editing the values of the **Pwat-Parm2** table for this Perlnd operation.

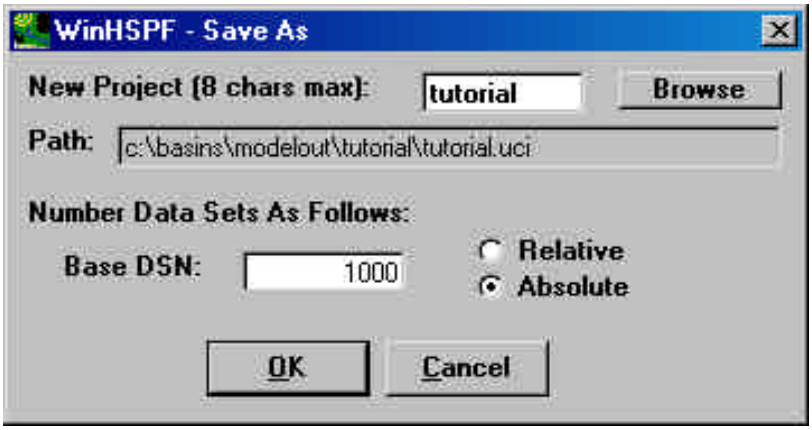


Click on the first row of the **LZSN** column. Edit the LZSN value, making it 13.1. After entering the number click the **OK** button. Click the **OK** button for the **Edit Operation** window as well.

At this point you have made a change to the UCI, but the file has not been saved. To save the changes, select the **File** menu and choose the **Save** option. This option will overwrite the previous version of the UCI with the revised version.



The user might prefer to save the changes to a new UCI file. To do so, choose the **Save As** option from the **File** menu. The **Save As** window will appear, in which the user may specify the name of the new project.



In addition to entering the name of the new UCI file, the user may also specify the other details about the new project. The **Browse** button is used to set the path name where the new UCI is to be stored. The other parameters pertain to the WDM data sets specified as outputs from this simulation.

When the UCI file is saved under a new name, WinHSPF scans the project WDM file to identify any WDM data sets associated with the previous UCI file name. For each data set identified, a new WDM

data set is built to contain the output from the new UCI file, and the External Targets block is modified to use these new data set numbers. The Base DSN field in conjunction with the Relative/Absolute radio buttons is used to specify the new data set numbers for the new project. A Base DSN of 1000 specified 'Absolute' means that the new data sets will be numbered using the first available data set numbers after 1000. A Base DSN of 1000 specified 'Relative' means that the new data sets will be numbered as the next available data set number after the current data set number plus 1000 (for example data set 101 will be numbered 1101).

Specify the name for the new UCI file, and click the **Save** button. WinHSPF will modify the project WDM file and the External Targets block of the new UCI file as described above. Once WinHSPF completes these modifications, the new UCI file is written to disk.